

What is Claimed is:

1. Apparatus for permanent placement across an ostium of a left atrial appendage in a patient, comprising:

5 a filtering membrane configured to extend across the ostium of the left atrial appendage and having a permeable structure which allows blood to flow through the filtering membrane but substantially inhibits thrombus from passing therethrough; and

10 a support structure defining a first configuration having a substantially cylindrical shape and a second configuration defining a radially enlarged medial portion to permanently engage the interior wall of the left atrial appendage, wherein the filtering membrane is attached to the support structure extending
15 across the ostium of the left atrial appendage.

2. Apparatus as defined in claim 1, wherein the support structure comprises a plurality of fingers each having a first end portion, a second end portion, and a medial portion, and wherein the medial portion of
5 each finger is radially outwardly expanded in the second configuration.

3. Apparatus as defined in claim 2, wherein the support structure further comprises first and second cooperating threaded members configured for relative angular rotation, wherein each cooperating
5 threaded member is attached to a respective first and second end portion of each finger, and wherein the first and second end portions of said fingers are approximated by said relative angular rotation between the cooperating threaded members.

4. Apparatus as defined in claim 3, further comprising:

an actuator configured to expand the plurality of fingers by angularly rotating one of the cooperating threaded members about the longitudinal axis.

5. Apparatus as defined in claim 4, wherein the actuator further comprises an outer tube configured for releasable attachment to the support structure.

6. Apparatus as defined in claim 5, wherein the support member comprises a tab structure and the outer tube defines an aperture at an end portion thereof, and wherein the outer tube is releasably attached to the support member by engagement of the tab structure in the aperture.

7. Apparatus as defined in claim 5, wherein the outer tube is releasably attached to the support member by a frictional fit.

8. Apparatus as defined in claim 1, wherein the fingers are fabricated of stainless steel.

9. Apparatus as defined in claim 1, wherein the fingers are fabricated of nitinol.

10. Apparatus as defined in claim 1, wherein the fingers comprise a barbed portion configured to engage an interior wall of the atrial appendage.

11. The apparatus of claim 1 further comprising an actuator configured to remotely radially outwardly expand the support structure.

12. The apparatus of claim 11, wherein the support structure comprises a plurality of fingers and wherein the actuator comprises a drive member configured to expand the plurality of fingers by
5 angularly rotating one of the cooperating threaded members about the longitudinal axis.

13. The apparatus of claim 1 wherein the support structure a membrane support frame that is radially outwardly expandable to engage the atrial wall surrounding the ostium, and wherein the filtering
5 membrane is attached to the membrane support frame to extend over the ostium of the left atrial appendage.

14. Apparatus as defined in claim 13, wherein the membrane support frame is fabricated from a material having shape-memory characteristics.

15. Apparatus as defined in claim 13, wherein the membrane support frame is elastically expandable.